CLAIMS

1. Wave energy to electrical energy power conversion apparatus comprising:

at least one linear generator having a stator and an armature which can be linearly driven relative to the stator to generate electrical energy and at least one float linked to the armature and which, in use, is immersed in the sea to be subject to the action of waves to drive the armature, the float(s), armature and link thereby constituting a wave-driven mass;

wherein the weight of the wave-driven mass is substantially equal to half the upthrust provided by the water displaced by the float(s) when fully immersed in the water.

2. Apparatus according to claim 1 wherein the contribution to the weight of the wave driven mass of the float(s) and link(s) is negligible compared with that of the armature.

3. Apparatus according to claim 1 or 2, wherein the float(s) and link(s) contribute negligible effective parasitic mass to the wave-driven mass.

4. Apparatus according to any one of claims 1-3 wherein the average horizontal area occupied by the linear generators does not exceed to any material extent the horizontal area occupied by the float(s) and any perimeter space surrounding the float(s) for the effective operation and motion thereof.

5. Apparatus according to any one of the preceding claims wherein the or each float is equipped with one or more paddles, suitably contoured, to augment the force of the sea waves acting upon the float.

6. Apparatus according to any one of the preceding claims in which the or each float is so contoured as to minimise any wave latent forces acting upon it, while maximising its buoyancy.

7. Apparatus according to any one of the preceding claims wherein the stator of the or each linear generator is maintained stationary and substantially perpendicular to the sea bed, and the armature thereof is affixed directly to the float for traversing the stator in accordance with the motion of the waves acting upon the float.

8. Apparatus according to any one of claims 1 to 6 wherein the stator of the or each linear generator is held in a cage above sea level, and the armature of the generator is caused to move relative thereto by linkage means to the float.

9. Apparatus according to claim 8 wherein the link to the float(s) is a direct extension of the armature of the generator.

10. Apparatus according to any one of the preceding claims in which control means is used to regulate the effective load impedance presented to the generator or generators in accordance with the strength of the prevailing wave motion acting upon the float(s), the regulation being such as to ensure that the electromagnetic damping of the motion of the generator, or generators as it or they generate electricity, is always such as to optimise the generation of power.